

# **FINAL MINUTES**

## **Governors' Liaison Committee Meeting (GLC)**

May 13, 2003

**Sheraton Westport Hotel Lakeside Chalet, St. Louis, MO**

by

Scott D. Whitney  
(CEMVR-PM-M)

## FINAL GLC MEETING MINUTES (May 13,2003)

### 1. WELCOME AND APPROVAL OF MINUTES OF LAST MEETING - COBB

The Upper Mississippi River-Illinois Waterway System Navigation Study Governors' Liaison Committee (GLC) was called to order by Steve Cobb, Chairman. The minutes from the February 2003 GLC meeting were accepted as Final without any corrections or modifications. The attendance list for the meeting is included as [Attachment 1](#).

### 2. NAVIGATION EFFICIENCY ALTERNATIVES – MANGUNO ([Attachment 2, Slides 1-16](#))

As a prelude to the subsequent presentations, Denny Lundberg provided a brief review of Plan formulation process and Decision Model being used by the study team to formulate, identify, and select a dual purpose plan. After this brief introduction, Rich Manguno presented the six tentative navigation efficiency alternatives along with their respective cost information and completion dates (Slides 3-6). These alternatives are similar to those presented in the Interim Report. One notable change is the inclusion of Switchboats in place of guidewall extensions, due to cost effectiveness considerations.

**Chris Brescia:** How does the cost of Switchboats compare to the guidewalls?

**Rich Manguno:** The annual cost savings vary by lock. The average savings of switchboats over guidewall extensions is approximately \$0.4 million assuming no additional lock staff is required with extended guidewalls. The average savings of switchboats over guidewall extensions is approximately \$0.9 million assuming additional lock staff is required with extended guidewalls.

**Chris Brescia:** It seems intuitive that a one time fixed cost would cost less than the cumulative annual investment extending at least 50 yrs into the future.

**Rich Manguno:** A constant annualized cost is used to compare cost and performance levels in order to capture the stream of expenditures.

**Dick Lambert:** The \$36 million listed for switchboats in Alt. 5, is this an annual cost? Would this be purchased with Federal dollars and operated by Corps employees?

**Rich Manguno:** Yes this is the annualized cost for SWB at 7 locations. It is most likely that these would be private industry boats that would be under some contractual arrangement with the Federal government for a specified period of time.

**Mike Wells:** What is the discount rate used in these annualized costs?

**Rich Manguno:** 5 7/8% is the current discount rate. The costs reflect 2001 prices.

**Chris Brescia:** Will Switchboat costs be covered under CG or O&M appropriations?

**Rich Manguno:** I am assuming this will be CG, but I am not the expert on this issue, we will need to pursue an answer to this question. CG would offer opportunities for cost share with Trust Fund.

**Barb Naramore:** In comparing the SWB costs from Alternatives 4 and 5 I notice the net gain of 2 SWB locations yet the cost nearly doubles. To what can this be attributed?

**Rich Manguno:** The average annual cost of switchboats with alternative 6 does nearly double compared to alternative 5. This seemingly disproportionate increase is due to the fact that the alternatives have different base years, and the average annual costs are expressed with a reference point of their individual base years. The later base year for alternative 5 (2023) compared to alternative 4 (2009) results in more compounding of early year costs for alternative 5 when performing the discounting necessary to calculate the average annual cost

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**Chris Brescia:** Why would the lock extension at 14-18 (Alt. 6) be justified? It seems SWB would be more economically justifiable.

**Rich Manguno:** These are just tentative alternatives we are just now running through the economic models. Continued testing and running these original alternatives will reveal the differential costs and benefits and likely result in further refinement or creation of new alternatives.

**Chris Brescia:** These are then just theoretical constructs?

**Rich Manguno:** These alternatives represent a first attempt to combine various navigation efficiency measures into alternatives. Previous screening of both large- and small-scale measures indicated these were the most promising. However, finding the very best combination of these measures is an iterative process.

**Steve Johnson:** With a new 1200' lock what happens to the existing 600' lock?

**Rich Manguno:** The existing lock would remain in service and may eventually be used to facilitate recreational traffic further adding system efficiency.

**Rich Worthington:** Why did we not consider lock extension at PEO and LGR

**Rich Manguno:** Because of year round navigation, the construction period would create significant negative effects on navigation, therefore only new construction, which would allow existing lock to continue operation during construction. This is the only large scale measure being considered for the Illinois River.

**Gary Clark:** Why are we not looking at lock extensions at PEO and LGR?

**Rich Manguno** – For the same reasons indicated in the previous response, we are currently not looking at lock extensions at PEO and LGR.

**John Hey:** How do you take into consideration the nonstructural and structural alternatives that are not mutually exclusive?

**Rich Manguno:** Yes it is true that these are currently being treated as mutually exclusive measures, however it is entirely possible that a future alternative could include a combination.

Rich provided a brief review of the Navigation Alternative Assessment Matrix and definition of the four primary Criteria being used (Slides 7-10) along with an illustrative handout example. **HANDOUT:** Titled “*APPROACH 1*” - provides an example matrix with made-up numbers for Economic model outputs across a range of elasticity values (TCM,  $E_{UB}$ , and  $E_{LB}$ ). The alternatives do not correspond to the alternatives just discussed. They do represent a progressive level of investment or improvement. Second set of numbers have been set from high to low across the various scenarios. Based only on this information one could draw several conclusions, Alternative 2 always has a positive benefit but generally provides minimal benefit, Alternative 4 has extremes on both ends but has the potential for considerable benefits.

**Ellen Fisher:** Will Alternatives 2 and 3 also be considered in this matrix?

**Rich Manguno:** Yes and any additional alternatives that will be generated in the coming weeks and months.

**Ellen Fisher:** Where in this matrix will you discuss/present the probabilities of these various scenarios?

**Rich Manguno:** We have discussed the need or consequences of attempting to assign probabilities. Per the previously released MFR on this topic, we will not be assigning

## FINAL GLC MEETING MINUTES (May 13, 2003)

probabilities to any of the aforementioned scenarios. Each individual decision maker, at all levels, will draw their own conclusions as to the likelihood of any given future condition.

**Chris Brescia:** What is the reasoning for not assigning probabilities?

**Rich Manguno:** These scenarios as constructed do not lend themselves to the development of probabilities.

**Denny Lundberg:** There is a strategy paper MFR providing a detailed answer to this question/topic.

**Holly Stoercker:** Is there some defined scheme to apply these criteria and identify the appropriate alternative very interested in seeing the detailed description of this process.

**Rich Manguno:** We are attempting to formalize this process but we currently do not have a definitive answer to this problem

**Denny Lundberg:** This is still a work in progress that we are continuing to develop and share as we proceed.

**Rich Worthington:** We are working on ways of displaying the results of the analysis which will aid in making comparisons. However, the Nav Study process will, to a large extent, depend on a subjective component that reflects personal attitudes or opinions towards the scenarios and the benefit evaluation methods, a characteristic not easily captured in a mathematical equation.

**Rich Manguno:** Transportation cost savings on an average annual basis are shown in slide 12, the higher the elasticity the lower the estimate of savings. These savings are computed by determining Avg. annual benefits – Avg. annual costs (will include construction, O&M, and mitigation).

**Chris Brescia:** How would these compare to the value derived from the existing navigation infrastructure?

**Rich Manguno:** Transportation savings for the year 2000 with TCM are \$1.2B, approximately \$950M with  $E_{LB}$ , and approximately \$800M  $E_{UB}$ .

**Chris Brescia:** Wouldn't knowing what this current benefit is for the existing traffic provide a validation of these model estimates? Can we make inferences as to where the reasonable (most likely) point should fall?

**Rich Manguno:** I wouldn't know how to do that, knowing the starting year estimates don't provide any insight into which is most likely.

### 3. ENVIRONMENTAL MITIGATION – BARR (Slides 17-32)

Ken provided a refresher as to the previous and ongoing activities surrounding the determination of environmental impacts and development of a mitigation plan.

**Mike Wells:** Will you be preparing a separate mitigation value for each alternative?

**Ken Barr:** Yes, for the purposes of determining the foreseeable environmental consequences of the various alternative plans, we will be running 30 separate model runs looking at only the effects of the increment of traffic. Over the past two years the study team has sought out model validation and refinement of various input parameters (i.e. backwaters, SAV, larval fish).

**Chris Brescia:** What have you published (larval fish estimates) beyond the first round, has any of this information been published?

**Ken Barr:** The 2001 Larval fish density data is available on the web, the 2002 data is in the final stages of internal review and will be shared with NECC in the next few months.

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**Chris Brescia:** Why are we looking at the plant effects above 13 where there is little incremental effects of traffic?

**Ken Barr:** Actually, navigation efficiency improvements will result in traffic increases throughout the system.

**Jon Duyvejonck:** Can you still show the incremental effect of L&D 26 and what is due to the new modifications?

**Steve Cobb:** The Corps is committed to providing an answer to this question.

**Gretchen Benjamin:** Your reference to aquatic plants, as a point of clarification, you were referring to submersed aquatics?

**Ken Barr:** That is correct. The plant models are run using Sago Pondweed and *Vallisneria*.

### 4. RED ANALYSIS – MANGUNO (Slides 33- 34)

Regional economic effects expressed as income and employments are used as a measure of changes in regional economic activity that result from implementing alternatives. Due to the cost prohibitive nature of the model of choice (REM) the costs for this activity will be shared between the Nav Study and Comp Plan since both will require these inputs into their overall decision process. A preliminary meeting will be held on May 15 at Holiday Inn - Airport in Moline, IL for interested stakeholders having RED information that could be incorporated into this effort. The Tennessee Valley Authority is under contract to secure this information and provide the computational analysis and reporting.

### 5. ENVIRONMENTAL SUSTAINABILITY ALTERNATIVES – BARR (Slides 35-56)

Ken provided additional information and updates on the development of environmental sustainability alternatives that are being formulated to address the regions identified goals and objectives.

**Holly Stoerker:** What is the strategy you are following or strategy to align management measures into alternatives?

**Ken Barr:** Based on what we want to accomplish we need to align the most beneficial actions even if we do achieve all of the Navigation Improvements needed to ensure economic and social sustainability.

**Barb Naramore:** How do you intend to correlate or justify the desired level of investment as it relates to the system goals and desired state of sustainability?

**Ken Barr:** A “virtual” reference can be constructed using a defined set of ecosystem attributes that in combination would define a sustaining, entire, and socially desired ecosystem. For the UMRS, the study team in association with the Expert panel is refining a “virtual” reference system by using goals and objectives established for the system. That target set of future conditions will serve as the reference for purposes of the Navigation Study and future UMRS management.

### 6. PATHWAYS GROUP

Denny provided a preview to the developing efforts in identifying “pathways to solutions” needed to address the bluff-to-bluff objectives or even the basin wide issues affecting the economic and environmental health of the UMRS. The study team has developed an associative matrix linking the management actions with various organizational pathways.

**7. COST SHARING –LUNDBERG (Slides 57-64)**

Denny provided a presentation on some of the options currently under development as a Strategy Paper on Cost Sharing. This MFR is still under development, a review Draft will be sent out to the GLC members in late June or early July 2003. The intent of this presentation was to receive some initial reaction and comment on the four cost sharing options.

**Chris Brescia:** In Option 3, are you referencing backwaters that are privately owned. As you are well aware, Lower Miss and Illinois land ownership is a difficult consideration

**Jon Duyvejonck:** What about tributary effects?

**Denny Lundberg:** This DRAFT provides our first attempt to put some of our thoughts and ideas on paper. Many of these issues raised and questions you are posing will require additional thought and discussion.

**Rich Worthington:** Willing sellers would have to be involved in areas outside the area secured for navigation servitude.

**Chris Brescia:** How does this fit into the Middle Miss program?

**Ken Barr:** There is still proposed authorization language that has not yet been worked out

**Rich Worthington:** Option 1 is the most conceptually pure in that we would be seek additional funding authority without changing authorizations. Options 2 and 3 try to get at actions that mostly address cumulative impacts within the lands that were acquired for navigation servitude. Option 4 looks at prioritizing and providing full federal funding for nationally recognized significant resources.

**Barb Naramore:** Options 2 and 3 are somewhat correlated with the EMP Report to Congress (RTC) effort.

**Steve Cobb:** We need to ensure these two efforts are linked and complimentary with one another.

**Gary Clark:** We are interested in how things will be carved up

**Rich Worthington:** We need a breakdown of restoration costs under each of these options.

**Holly Stoercker:** This issue is reminiscent of the way in which EMP was originally developed, the regionality issues and other challenges

**Rich Worthington:** All of these options deviate from the national policy, the desire is that the region would reach consensus and be able sell it to the national decision makers.

**Steve Cobb:** We have not been effective in gaining exceptions or deviations for cost sharing arrangements under other 906E type activities, especially as it pertained to the assumption of O&M

**Chris Brescia:** What is the national impact of this decision, afraid we could spend a tremendous amount of time and energy to develop an option that just won't sell due to the national level concerns or implications.

**Steve Cobb:** I am sure this issue will attract such national scrutiny.

**Jon Duyvejonck:** I would recommend sitting down with a cost sharing expert and legal consultant to look at various examples and possible precedents for various options.

**Steve Cobb:** Eventually we will have folks looking at the full package of options we identify.

**Gretchen Benjamin:** One of the things that it is difficult for the states to handle is the skyrocketing costs of a project once the federal government gets involved. It can become a very costly venture.

**Rich Worthington:** What do you see as the primary drivers running up cost share costs?

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**Gretchen Benjamin** For example, the State of Wisconsin was looking at a 1135 cost share with a 25% cost share, the total project to construct in Pool 7 was around 90K if we would have pursued this thru a federal program the cost ran up to nearly 250K

**Steve Cobb:** Were the design features the same

**Gretchen Benjamin:** Yes, John Hendrickson CEMVP assisted in the development and original design.

### 8. IMPLEMENTATION OPTIONS – LUNDBERG (Slide 65)

**Gretchen Benjamin:** Initial reaction to Option 3: it only takes care of one aspect of the ecosystem would narrowly focus on only one ecosystem component at the expense of others

**Steve Cobb:** It is envisioned that it would be a combination of many of these in a comprehensive fashion some activities will require just such site specific authorization (i.e. fish passage at L&D 19).

**Jon Duyvejonck:** Would we also look at user fees or other alternatives to implement some of these from a federal and nonfederal perspective?

**Steve Cobb:** The state can pursue whatever funding sources they can, we have yet to find any substance or support of the creation of federal initiatives in user fees.

**Steve Cobb:** The Coastal Louisiana project is looking at innovative funding. Oil and gas severance taxes are being targeted. It is an existing system that could be investigated further. In this case the state (LA) is looking at new and innovative ways to generate cost-share funds.

**Denny Lundberg:** Some of these issues are still awaiting our attention down the road a bit, but we need to begin thinking and discussing this topic

### 9. MISCELLANEOUS – LUNDBERG/WHITNEY

#### a. NRC arrangement

**Holly Stoercker:** Have you scoped out this issues and topics they will be looking at?

**Denny Lundberg:** We hope to have the final Scope of Work signed in the coming weeks, we will post this to the website once it is official.

**Holly Stoercker:** Have the individuals that will be on the panel been identified? Will it be a multidisciplinary panel?

**Rich Worthington:** No we have not been notified as to the names of the members. Yes, the panel will include a diverse assortment of professionals representing various fields of expertise covered in this study.

**Holly Stoercker:** Will they also be looking at institutional arrangements?

**Denny Lundberg:** While this is not a major focus area of their review, it is possible that they will have interest and questions concerning the past, current and future institutional arrangements. The NRC will focus its review on the key study issues, assumptions, and areas of controversy.

#### b. Public Meetings (Slides 67-73)

Scott Whitney provided a review of the proposed locations and format for the upcoming October 2003 public meetings to discuss tentative alternative plans.

**Denny Lundberg:** Indicated that the study team would like to have the stakeholders represented and available to answer questions at these meetings similar to those held in March 2002.

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**Gary Clark:** Questioned the omission of Quincy due to the number of interested stakeholders in that area that would likely not travel to St. Louis or Rock Island.

### **c. Schedule Update (Slides 74-75)**

Denny Lundberg provided a review of the major study milestones and upcoming events.

### **10. GLC COMMENTS AND DISCUSSION – COBB**

NONE

### **11. PUBLIC COMMENTS**

NONE

### **12. ADJOURN**



# APPROACH I

Evaluation Matrix

Net Benefits

"Reasonable Implementation" Schedule

	Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5		
	TCM	E <sub>LB</sub>	E <sub>UB</sub>	TCM	E <sub>LB</sub>	E <sub>UB</sub>	TCM	E <sub>LB</sub>	E <sub>UB</sub>	TCM	E <sub>LB</sub>	E <sub>UB</sub>	TCM	E <sub>LB</sub>	E <sub>UB</sub>
Alt 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt 2	8	6	14	17	15	13	18	16	14	19	17	15	20	18	16
Alt 3	-80	-90	-100	100	20	-10	120	25	-5	140	30	50	150	40	30
Alt 4	-160	-180	-200	150	-10	-50	200	15	-20	240	25	-10	280	60	10
Alt 5	-240	-270	-300	-50	-150	-200	-10	-110	-150	50	-90	-110	300	-70	-90

## Step 1

(a) Sort net benefits from low to high for each alternative to make mental processing of data easier.

(b) Select alternative with "best" distribution of net benefits.

Alt 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt 2	6	8	13	14	14	15	15	16	16	17	17	18	18	19	20
Alt 3	-100	-90	-80	-10	-5	20	25	30	30	40	50	100	120	140	150
Alt 4	-200	-180	-160	-50	-20	-10	-10	10	15	25	60	150	200	240	280
Alt 5	-300	-270	-240	-200	-150	-150	-110	-110	-90	-90	-70	-50	-10	50	300

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### ATTACHMENT 1 - Attendance List

GLC Meeting May 13, 2003

Sheraton Westport Hotel Lakeside Chalet, St. Louis, MO

	Name	Affiliation	Phone	E-mail
1	Cobb, Steve	USACE – MVD	601-634-5854	stephen.cobb@usace.army.mil
2	Fisher, Ellen	Wisconsin	608-267-9319	ellen.fisher@dot.state.wi.us
3	Hey, John	Iowa	515-239-1454	john.hey@dot.state.ia.us
4	Lambert, Dick	Minnesota	651-296-1609	dick.lambert@dot.state.mn.us
5	Clark, Gary	IL DNR	217-785-3334	gclark@ndrmail.state.il.us
6	Wells, Michael	Missouri	573-751-2867	nrwellm@mail.dnr.state.mo.us
7	Anderson, Angela	MRBA	314-968-8546	angela@weandersons.com
8	Barr, Ken	USACE – MVR	309-794-5349	kenneth.a.barr@usace.army.mil
9	Bayles, W.J., Col.	USACE – MVR	309-794-5260	william.j.bayles.col@usace.army.mil
10	Benjamin, Gretchen	WI DNR	608-785-9982	gretchen.benjamin@dnr.state.wi.us
11	Brescia, Chris	MARC 2000	314-436-7303	bresh@aol.com
12	Duyvejonck, Jon	USFWS	309-793-5800	jon_duyvejonck@fws.gov
13	Holland-Bartels, Leslie	USGS-UMESC	608-781-2211	leslie_holland-bartels@usgs.gov
14	Johnson, Steve	MN DNR	651-296-4802	steve.johnson@dnr.state.mn.us
15	Loss, Gary	USACE – MVR	309-794-5249	gary.l.loss@usace.army.mil
16	Lundberg, Denny	USACE – MVR	309-794-5308	denny.a.lundberg@usace.army.mil
17	Manguno, Rich	USACE – MVN	504-862-1923	richard.j.manguno@usace.army.mil
18	Naramore, Barb	UMRBA	651-224-2880	bnaramore@umrba.org
19	Stoerker, Holly	UMRBA	651-224-2880	hstoerker@umrba.org
20	Shepard, Larry	USEPA	913-551-7441	
21	Whitney, Scott D.	USACE – MVR	309-794-5386	scott.d.whitney@usace.army.mil
22	Worthington, Rich	USACE – HQ	540-665-3939	richard.t.worthington@usace.army.mil

## **Attachment 2**

Navigation Efficiency Alternatives (slides 1-16)

Environmental Mitigation (slides 17-32)

Regional Economic Development (slides 33-34)

Env. Sustainability Alternatives (slides 35-56)

Cost Sharing Options (slides 57-64)

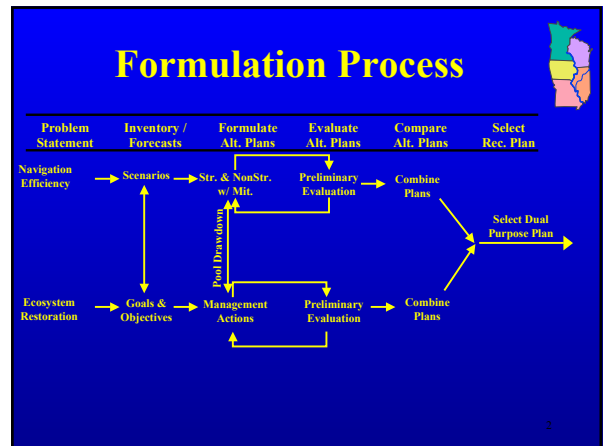
Implementation Options (slide 65)

Public Meeting Format (slides 67-73)

Schedule Update (slides 74-75)

Presented by  
Denny Lundberg, Rich Manguno, Ken Barr, and  
Scott Whitney

US Army Corps of Engineers



### Navigation Efficiency Alternatives

**Alternative 1: No Action**

**Alternative 2: Congestion Fees**

**Alternative 3: Scheduling/Demand Management**

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### Navigation Efficiency Alternatives

**Alternative 4:**

- ✓ Moorings @ 12, 14, 18, 20, 22, 24, & LGR
- ✓ Switchboats @ 20-25

**First Cost of Infrastructure Improvements:**  
\$5 M w/o Mitigation or O&M

**Annual SWB Operation Cost: 18.1M**

**Total Ave Annual Cost: \$18.5M**

**Completion Date: 2009**

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### Navigation Efficiency Alternatives

**Alternative 5:**

- ✓ Moorings @ 12, 14, 18, 24, & LGR
- ✓ Switchboats @ 14-18, PEO, & LGR
- ✓ Lock Extensions @ 20-25

**First Cost of Infrastructure Improvements:**  
\$652.4M w/o Mitigation or O&M

**Annual SWB Operation Cost: \$35.9M**

**Total Ave Annual Cost: \$108M**

**Completion Date: 2023**

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### Navigation Efficiency Alternatives

**Alternative 6:**

- ✓ Moorings at L&D 12, 14, 18, & 24
- ✓ Switchboats @ 11-13
- ✓ Lock Extensions @ 14-18
- ✓ New 1200' Locks @ 20-25, PEO, & LGR

**First Cost of Infrastructure Improvements:**  
\$2.1B w/o Mitigation or O&M

**Annual SWB Operation Cost: \$8M**

**Total Ave Annual Cost: \$188M**

**Completion Date: 2035**

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## Navigation Altern. Assessment Matrix



Alternatives	Scenario 1
1	TCM ESSENCE Environ. Impacts Regional Econ. Develop. Social Impacts

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## Navigation Altern. Assessment Matrix



Altern.	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
1					
2					
3					
4					
n					



Risk Robustness Adaptability Acceptability

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## Criteria



- Risk**-Relative risk of selecting, or not selecting a plan considering the variability in expected performance across all scenarios.
- Robustness**-Alternatives or combinations of alternatives that make positive contributions to NED/NER under a range of scenarios.

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## Criteria



- Adaptability**-The degree to which the plan could be adjusted and modified to respond to new information.
- Acceptability**-The degree to which the plan is supported by basin interests.

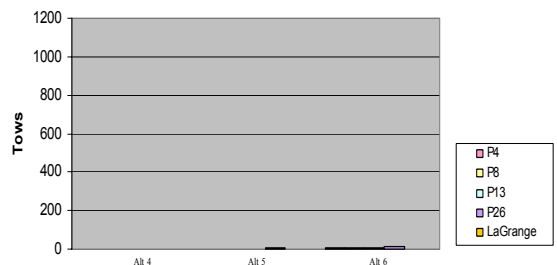
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## Review Example Matrix

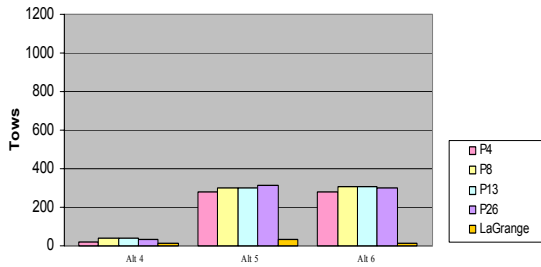


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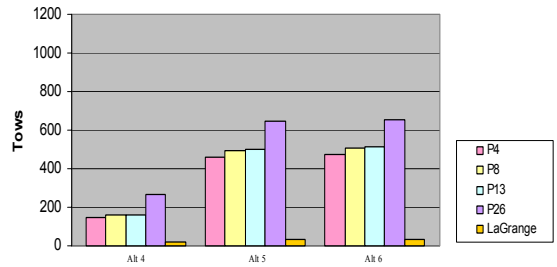
2030  
Annual Incremental Tows  
Least Favorable Trade Scenario-TCM



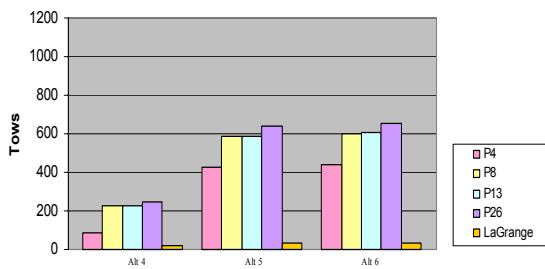
2030  
Annual Incremental Tows  
Less Favorable Trade Scenario-TCM



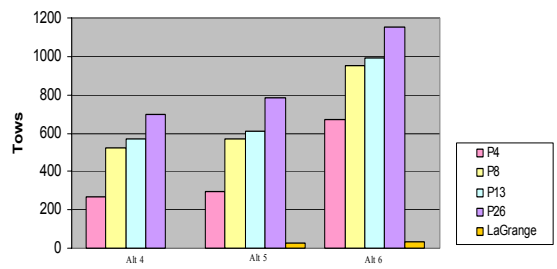
2030  
Annual Incremental Tows  
Central Trade Scenario-TCM



2030  
Annual Incremental Tows  
Favorable Trade Scenario-TCM



2030  
Annual Incremental Tows  
Most Favorable Trade Scenario-TCM



## Mitigation Planning Update

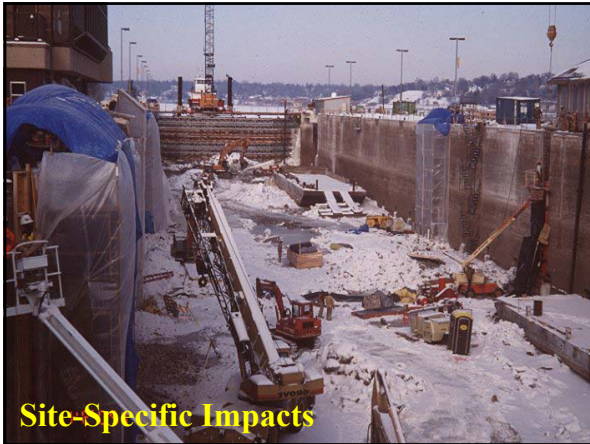
## Preliminary Economic Analysis

Preliminary Economic Analysis

Traffic per Alternative

Mitigation Planning

Final Economic Analysis



## Site-Specific Environmental



- Site-Specific Habitat Assessment, Report published September 1998
- Quantitative assessment at lower 7 lock sites, qualitative at upper sites
- Primary focus on large-scale measures

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## System Environmental



- Resources of Concern
  - Backwaters & Side Channels - sedimentation
  - Plants
  - Mussels
  - Fish
  - Bank Erosion
  - Historic Properties
- Adaptive Mitigation Strategy
  - Avoid & Minimize, Implement, Monitor, Feedback

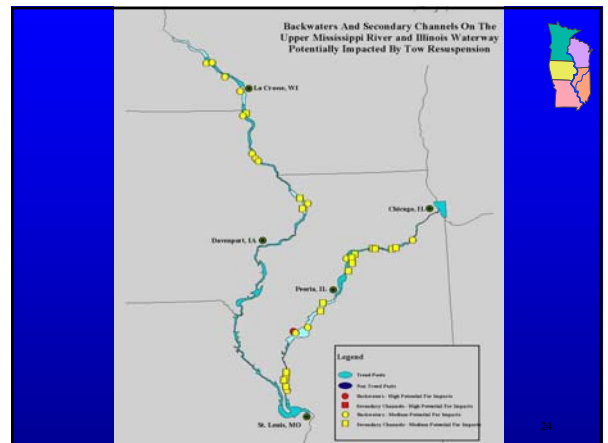
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## System Environmental (Backwater and Side Channel Impacts)



- Identified Impact Areas
  - UMR: 9 backwaters, 3 secondary channels
  - IWW: 6 backwaters, 14 secondary channels
- Avoid, Minimize, & Mitigation Measures
  - diversion weir at channel inlet
  - deepen or restore
  - move sailing line away from inlets
  - reduce vessel speed in specific reaches
  - habitat restoration projects

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## System Environmental (Plant Impacts)



- **Identified Impact Areas**
  - Pools 9, 10, 12, 13, 19
  - sediment resuspension along main-channel border
- **Avoid, Minimize, & Mitigation Measures**
  - off-shore revetment
  - floating breakwaters
  - island construction
  - water level management
  - move sailing line
  - reduce vessel speed

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## System Environmental (Fish Impacts)



- **Impacts:**
  - Forage Fish: minimal concern
  - Commercial Species: significant species - specific impacts
  - Sports Fish: significant species - specific impacts
- **Avoid, Minimize, & Mitigation Measures**
  - Create Spawning & Nursery Habitat: off-channel areas, managed water levels, off-shore revetments, secondary channel restoration
  - notch wing dams, construct L-head wing dams, construct chevrons, island construction
  - fish passage (?)
  - move sailing line from critical habitat, traffic scheduling
  - hatcheries for selected species (?)

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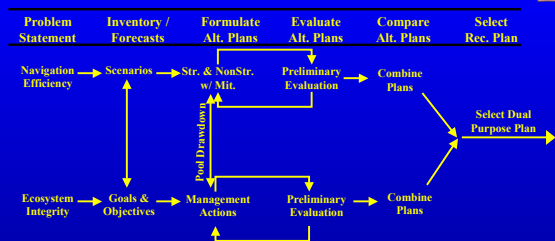


**Kym Rouse Campbell**  
**SENES Oak Ridge, Inc.**



- **Measures changes in regional economic activity (employment and income) that result from implementing alternatives.**
- **Changes in economic activity result from:**
  - Construction expenditures (navigation efficiency alts & ecosystem alts)
  - Transportation efficiencies generated by an alternative (navigation efficiency alts)

- Impacts identified by regions (IA, IL, MN, MO, WI, rest of US)
- Conducted in conjunction with the UMR Comprehensive Study
  - Same study area
  - Cost efficiencies
  - Timeframes compatible



## Environmental Objective Results to Date



- Pool-wide and site-specific environmental objectives were discussed
- Quantitative target ranges were noted with pool-wide objectives
- 2,600 site-specific objectives were identified
- Categorized into 82 key UMR-IWW objectives

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## Essential Ecosystem Characteristics



- **Geomorphology**
  - Restore secondary channels
- **Hydrology**
  - Provide low water periods
- **Water Quality**
  - Maintain DO > 5 ppm in selected habitats
- **Habitat**
  - Increase submersed aquatic plant abundance
- **Biota**
  - Maintain viable population of native mussels

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## Ecosystem Objective/Management Action Relational Database



82 Objectives

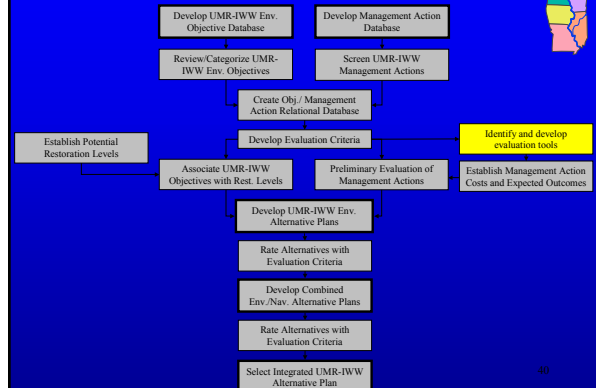
360 Management Actions

### Management Actions

Management Actions	Ecological Objectives/Needs	Geomorphology	Hydrology/River Hydraulics	Habitat
Mainstem dam gate operation				
Construct Islands		3		3
Construct temporary structures to divert flow		3		3
Small scale drawdown for vegetation		3		3
Construct wave breaks		3		2

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## UMR-IWW Ecosystem Sustainability Alternative Formulation/Evaluation Process



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## UMR-IWW Navigation Study Process for Establishing UMRS Ecological Sustainability

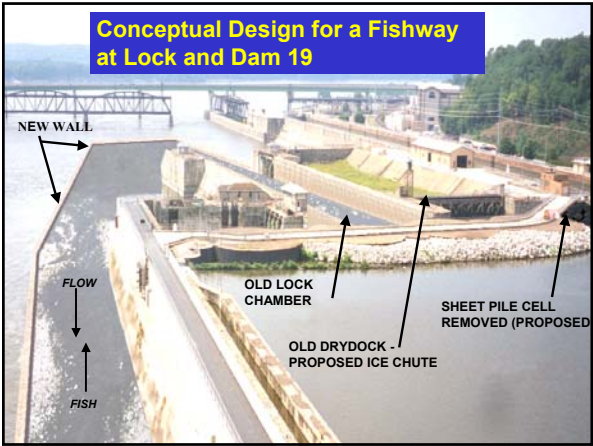
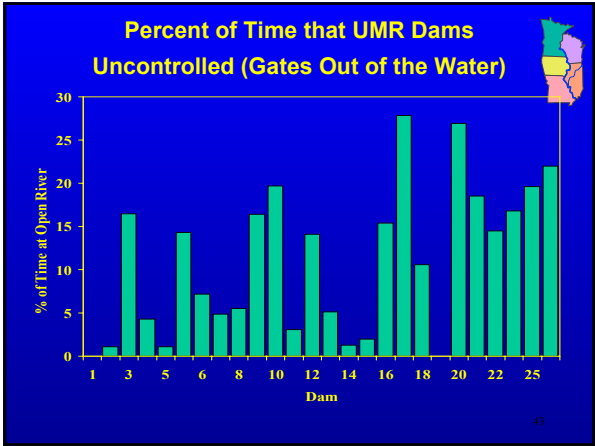


1. Establish Objectives
2. Management Actions
3. Anticipated Costs and Expected Outcomes
4. Environmental Alternative Analysis
5. Integrated Alternatives and Tradeoffs Analysis

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## Fish Passage Through Dams on the Upper Mississippi River System





Pool	Benefits					Costs					Efficiency	
	Acres Exposed	Dredging	Water Supply	Hydropower	Composite Cost	W/C Efficiency	W/C Efficiency	W/C Efficiency	W/C Efficiency	W/C Efficiency	W/C Efficiency	W/C Efficiency
11	High	High	High	High	High	High	High	High	High	High	High	High
12	Moderate	Moderate	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
13	High	High	Low	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
14	Moderate	Very High	Low	Low	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
15	Very Low	Moderate	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
16	Moderate	High	High	High	High	High	High	High	High	High	High	High
17	Very Low	Moderate	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
18	Moderate	High	Low	Very Low	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
19	High	Low	Low	High	Low	Low	Low	Low	Low	Low	Low	Low
20	Low	Low	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
21	Low	Low	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
22	Low	Low	High	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
23	Low	High	Low	High	High	High	High	High	High	High	High	High
24	Very Low	High	High	High	High	High	High	High	High	High	High	High
25	Very Low	High	Low	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
26	Very Low	Moderate	Low	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
27	High	Very Low	High	High	Low	Low	Low	Low	Low	Low	Low	Low
28	High	High	High	High	High	High	High	High	High	High	High	High



## Island Protection and Restoration

### Pool 8 Islands HREP Phase II, near Stoddard, Wisconsin

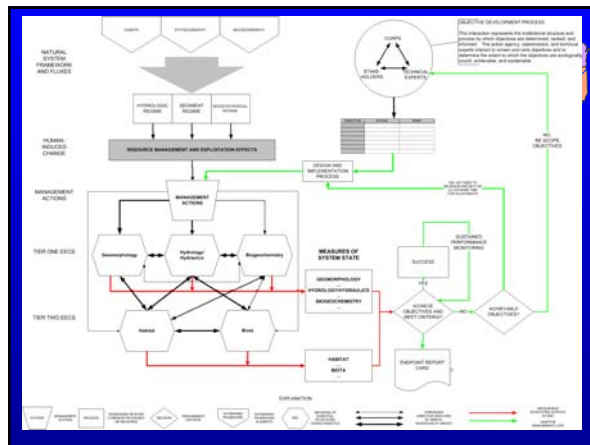


October 1961

August 1994

August 2000

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### UMR-IWW Navigation Feasibility Study Environmental Alternative Formulation



#### Water level management

Priority based on environmental need, feasibility, efficiency, and acceptability.

Pools 11 and 13 – Very high priority  
Pools 14, 18, 19, 25 – High priority  
Pool 16 – Moderate priority

#### Fish Passage

Priority is based current level of connectivity.

Pools 1 and 19 – Very high priority  
Pools 2, 5, 11, 14, 15 – High priority  
Pools 4, 6, 7, 8, 13 – Moderate priority

#### Dike alteration and side channel restoration

Priority based on environmental need and potential for dike alternation success in addressing the need.

RM 62.5-71 (Trail of Tears State Park) and RM 80-95 (Grand Tower) – Very high priority  
RM 35-46 and RM 149.5-168 – High priority  
RM 0-20 and RM 54-62.5 – Moderate priority

#### Large scale floodplain restoration

Restoration could often be achieved by reducing the amount of pumping or levee setbacks.  
Henderson  
Emiquon

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#### Workshop Objectives (with HNA acreage needs)

High priority ecosystem objectives identified through the Nov. 2002 Stakeholder Workshops and previous river studies.

1. Emergent and Submersed Vegetation Restoration
2. Forest Restoration
3. Island Restoration

Pools 1-13: 1,000 acres  
Pools 14-26: 3,000 acres  
Open River and Illinois River: 20,000 acres

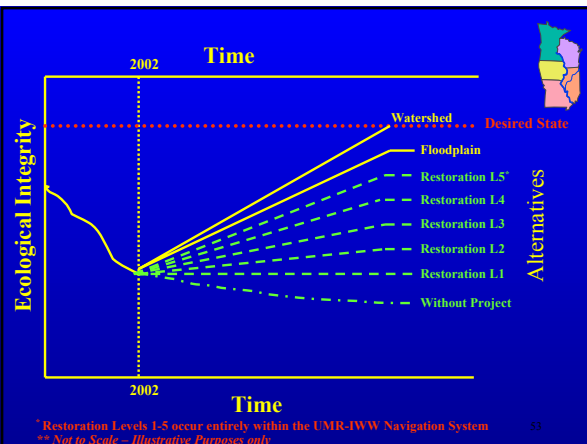
4. Backwater Depth Restoration
5. Increase Water Clarity

Pools 1-13: 30,000 acres  
Pools 14-26: 15,500 acres  
Open River: 12,500 acres  
Illinois River: 19,000 acres

6. Secondary Channel Restoration
7. Increase/Decrease Connectivity

Pools 1-13: 9,000 acres  
Pools 14-26: 9,000 acres  
Open River: 12,500 acres

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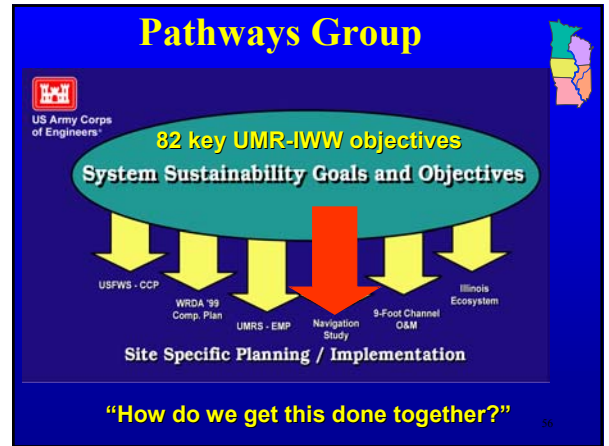
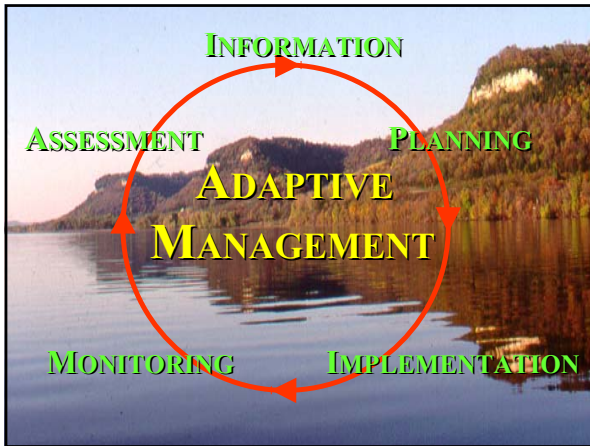
\* Restoration Levels 1-5 occur entirely within the UMR-IWW Navigation System  
\*\* Not to Scale – Illustrative Purposes only

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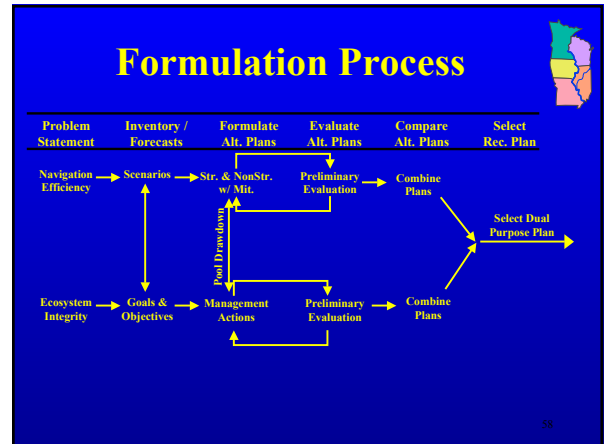
## Ecosystem Alternative Evaluation Criteria

Planning Guidance Criteria	Specific Criteria	Tools	1	2	3	4	5
Completeness	Environmental Diversity: Robustness of alternative plan in addressing multiple types of objectives.	Conc. Model City, database	< 20%	20-40%	40-60%	60-80%	> 80%
Effectiveness	Environmental Benefit: Habitat units Environmental Quality: Ability of alternative plan to address high priority objectives. Spatial scale of expected benefits Time required to obtain ecosystem benefits Durability: What is the average life expectancy of the alternative's management actions?	Conceptual/predictive models City, database, HNA, UMRCC Conceptual/predictive models Conceptual/predictive models Conceptual/predictive models	Low Low < 1 mi <sup>2</sup> > 5 yrs < 1 yr	Low Moderate 1-10 mi <sup>2</sup> 2-5 yrs 1-5 yrs	Moderate Moderate 10-100 mi <sup>2</sup> 5-10 yrs 5-10 yrs	High High 100-1000 mi <sup>2</sup> 10-20 yrs 10-20 yrs	High High > 1000 mi <sup>2</sup> > 20 yrs > 20 yrs
Acceptability	Stakeholder Acceptability Social Acceptability	Workshops, NECC, UMRCC, HNA Public money, HNA	Low Low	Moderate Moderate	Moderate Moderate	High High	High High
Uncertainty	Likelihood of success Consequence of selecting the wrong plan	Conceptual/predictive models Conceptual/predictive models	Low Low	Moderate Moderate	Moderate Moderate	High High	High High
Flexibility/Adaptability	Ability to modify alternative plan	URACE	Low	Moderate	Moderate	High	High
Compatibility	Navigation Impacts Ecosystem Impacts	Conceptual/predictive models Conceptual/predictive models	Negative Negative	None None	None None	Positive Positive	Positive Positive
Efficiency	Cost Effectiveness: Compare cost to benefit scores summed from above. (Benefit Score/Cost) Note: Cost includes construction/modification, O&M, and monitoring.	URACE					

DRAFT



## Cost Sharing and Implementation Issues



- ## Mitigation of Navigation Improvement Impacts
- Site Specific Direct Impacts
  - System Impacts
  - Authorized and Implemented as Part of Navigation Improvements
  - Funding
    - 50% Construction General
    - 50% Inland Waterway Trust Fund
  - Not part of Ecosystem Restoration

- ## Ecosystem Restoration Project Cost Sharing
- Present Legal/Policy Requirements
    - First Costs: 65% Federal, 35% Non-Federal
      - Non-Federal LERRDS count towards 35%
    - OMMRR: 100% Non-Federal
  - Proposed Cost Sharing Could Include a Combination of 100% Federal Funding as well as Cost Shared Features



## Cost Sharing Options



### Significant Considerations

- Nationally Recognized Ecosystem
- Significant Federal Investment in Refuges & Waterway
- Presence of Federally recognized, regulated and protected resources including migratory waterfowl and endangered species.

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## Cost Sharing Options



### Criteria for 100% Federal Consideration:

- Option 1-Measures attributable to addressing the ongoing and cumulative existing O & M project impacts
- Option 2-Measures Involving the Modification of the Structures and Operations of the Existing Projects and Measures on Project and Lands Included in the National Refuge System (Measures on Other Public Lands or Requiring Land Acquisition Would Be Cost Shared.)

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## Cost Sharing Options



### Criteria for 100 % Federal Consideration

•Option 3-Measures Involving the Modification of the Structures and Operations of the Existing Projects, Measures on Project and Lands Included in the National Refuge System and Measures in Backwater Areas Connected To the Main River Channel Regardless of Current Ownership (Measures on Other Public Lands or Requiring Land Acquisition, Other Than Connected Backwater Areas, Would Be Cost Shared.)

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## Cost Sharing Options



### Criteria for 100% Federal Consideration

- Option 4- Full Implementation of WRDA 1986 Section 906
- Recommendations for Enhancement of Fish and Wildlife Resources with National Significance
  - First Cost: 100% Federal Cost
  - Work-in-Kind 80% Non-Federal Share
  - OMMRR: Operating Agency
  - National Significance Criteria Section 906(e):
    - NMFS List of Species of National Economic Importance
    - Federally listed Threatened & Endangered Species
    - Activities located on National Wildlife Refuges
  - Original Basis for EMP Cost Sharing

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## Implementation Options



1. Expanded EMP
2. Programmatic Authorizations
3. Project Specific Authorizations
4. Project Specific Authorization with Subsequent Approval of the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate
5. Identification of Projects for Subsequent Authorization

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## Miscellaneous



**NRC**  
**Oct Public Meeting**  
**Schedule Update**

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## UMR-IWW SYSTEM NAVIGATION FEASIBILITY STUDY



### Public Meeting Plan October 2003

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## GOALS OF THE MEETINGS



- To obtain an indication of public acceptability regarding the tentative integrated alternative plans.
- To determine which alternative(s) best work toward the restructured study goal of ensuring that the Mississippi and Illinois Rivers continue to be nationally treasured ecological resources and effective transportation systems.

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## OBJECTIVES



- To educate the public about the decision process used to arrive at the tentative integrated alternative plans
- To involve the public in a Q&A session to clarify questions about the plans
- To solicit feedback from the public via a comment sheet that will indicate which alternative(s) they feel should be considered to meet the goal of the restructured study
- To review the public's feedback and consider it in formulating the final study plan (or recommended plan)

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## FRAMING STATEMENT



Which of these alternatives should be considered to ensure that the UMR-IWW System continues to be a nationally treasured ecological resource and an effective transportation system?

NOTE: This statement will be printed on top of the matrix-style comment sheet & the public will have the opportunity to select one, some, all, or none of the plans (or select a combination of plan components).

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## Public Meetings



- Mid to Late October 2003
- At 5 locations
  - ✓ St. Louis, MO
  - ✓ Peoria, IL
  - ✓ Bettendorf, IA
  - ✓ La Crosse, WI
  - ✓ St. Paul, MN
- Other locations considered
  - ?? Quincy, IL
  - ?? Dubuque, IA

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## Meeting Format



- 30-40 minute presentation
  - Update & present findings to date
- Q&A for presentation materials
  - Serve to clarify questions regarding the presentation
  - No statements at this point
- Comment sheet fill-in period
  - 30 minute time to allow attendees to provide feedback
  - No voting or ranking will be done
- Final segment: Formal Statements & Questions

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## Other Considerations



- **Afternoon “Open House” session**
  - Allows for more publics to attend
  - All meeting materials & presentation would be available
- **Web based Presentation, Q&A Section and Comment Submittal Form**
- **Court Stenographer will not be used**

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## Feasibility Study Schedule



•GLC	May 03
•NRC Initial Briefing	Jun/Jul 03
➢ Stakeholder Involvement	
•GLC/NECC/ECC	Jul 03
•Federal Task Force	Jul 03
➢ Preliminary Economic Analysis	
➢ Cost Sharing → 3 Basket Theory	
•GLC	Aug 03
•Tentative Plans Identified	Sep 03
•Federal Task Force	Oct 03
➢ Tentative Plans	
•Public Meetings	Oct 03

## Feasibility Study Schedule



•Alternative Formulation Briefing	Nov 03
•Draft Feasibility Report	Apr 04
•90 day Public Review	Apr-Jun 04
•Public Meetings	May 04
•Final Feasibility Report w/EIS	Aug 04
•Chiefs Report	Nov 04

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